

(Area Wide Optimization Program)

AWOP Newsletter

Department of Environmental Quality

Idaho Drinking Water Program

August 2005

Improving public health through optimization.

AWOP in Idaho

In June 2003, Idaho became the first state in the Northwest to fund support for this voluntary program. AWOP is consistent with DEQ's Mission Statement to protect public health. With only 17 conventional water treatment plants, Idaho was in a position to utilize its limited resources to effect positive changes within each plant.

The goal of AWOP is to provide support and training to the most vulnerable of the public surface water treatment plants - namely those coagulation plants using direct or conventional filtration.

The goal of this newsletter is to promote communications between surface water plant operators with similar challenges and solutions to those challenges.

Please see page 3 for a map of Idaho's coagulation plants and a list of contacts at each of those plants.

Year 1 - AWOP Participation...

In the first AWOP year (June 2003 through June 2004), all of the eligible plants were visited by the state AWOP coordinator. The goals of the program were explained and operators were invited to join this *voluntary* program. In the first year, 13 of the 17 plants committed to the program. The first year participants and the goals which they hoped to achieve are summarized in the next column.

AWOP PARTICIPANTS July 2003—June 2004

• Carlin Bay Property Owners
• City of Juliaetta
• City of Lewiston
• City of McCall
• City of Orofino
• City of Pierce
• City of Weiser
• Elk City Water & Sewer
• Horseshoe Bend Water Supply
• Laclede Water District
• Sandpoint Water Dept. (Lake Treatment)
• Sandpoint Water Dept. (Sand Creek)
• United Water (Marden Plant in Boise)

Conventional and Direct Surface Water Treatment Optimization Goals for Idaho

Data Collection and Reporting:

Daily maximum raw water turbidity
Daily maximum settled water turbidity from sedimentation basin
Continuous individual filter turbidity
Monthly post backwash profile for each filter
Required monthly operating reports in electronic format
Use of EPA Turbidity Optimization Assessment spreadsheet.
Use of Disinfection Profiling spreadsheet.

Individual Sedimentation Basin Performance Goals:

95% of settled water turbidities < 1 NTU when annual average raw water turbidity is ≤ 10 NTU.
95% of settled water turbidities < 2 NTU when annual average raw water turbidity is > 10 NTU

Individual Filter Performance Goals:

95 % of filtered water turbidities ≤ 0.10 NTU
Filter backwash initiated before turbidity exceeds 0.10 NTU.
Post backwash spike of ≤ 0.30 NTU returning to ≤ 0.10 NTU in 15 minutes or less.
Maximum turbidity of 0.30 NTU.

Disinfection Performance Goal:

CT values to achieve or exceed Giardia log inactivation specified for system by regional DEQ office.

Year 2 - AWOP Participation...

As the enhanced LT1SWTR turbidity regulations became imminent, two more plants joined the program in summer 2004. The *City of Priest River* was the first to join followed closely by the *City of Bonner's Ferry*.

Performance Based Training (PBT)

The AWOP goal of enhanced training for coagulation plant operators became a reality in July 2004.

PBT is training that was piloted in Region 6 (Louisiana) in 1999. PBT was the response to the common and repetitive factors limiting plant performance that were becoming evident through AWOP. PBT brings together trainers, facilitators, water plant operators and administrators for 5 sessions over a period of 12-15 months. The sessions are progressive and include both classroom and in-plant training and are supported by operator homework assignments and periodic phone facilitation.

Funding was found to bring PBT to EPA Region 10. DEQ drinking water administrators quickly offered to contribute to the cost of this training and the City of Lewiston was equally quick to offer to host the sessions at their facility.

By November, a trainer had been selected; participating AWOP plants had been interviewed and selected for PBT; facilitators had been selected and trained; and dates and locations of all sessions had been set.

PBT Timeline and Photolog:



November 2004 - Facilitator Training

The objective of this training was to develop skills to better support water system personnel during PBT. Facilitators included drinking water personnel from DEQ & EPA & University of Alaska.

PBT timeline and photolog continued....



December 2004 - Lewiston Water Plant - Session 1
Optimizing Performance Goals

Administrators attended this session along with operators. Workshops were conducted on: defining a water professional; assessing plant performance; and sampling, testing, and data development.



March 2005 - Weiser Water Plant - Session 2
Developing Problem-Solving & Priority Setting Skills

Thirty people attended this session. Each plant operator presented a report on homework assignments. A workshop was conducted on developing and implementing special studies. Participants were divided into five teams for hands-on session. The above photo shows work on a backwash special study.




May 2005 - Lewiston Water Plant - Session 3
Coagulation Control Tool Development

Each operator had designed and conducted special studies in their own plants. Above, Joe Carey, from City of Priest River reports on progress and conclusions from his studies. The second photo shows one of 5 studies performed in the afternoon session on various aspects of jar testing and dosage control.

September & December 2005—The last two PBT sessions will focus on prioritizing key areas for optimization
(continued on page 4)



Plant Name (north to south)	Population Served	Contact Operator	Telephone Number	E-mail Address
City of Bonner's Ferry 	4,000	Chuck Lycans	267-4380	waterguys@bonnersferry.id.us
City of Sandpoint (Sand Creek)	8,000	Jack DeBaun	263-3407	wtp@ci.sandpoint.id.us
City of Sandpoint (Lake Plant)	8,000	Jack DeBaun	263-3440	wtp@ci.sandpoint.id.us
City of Priest River 	2,300	Joe Carey	448-2051	jlcarey@netscape.com
Lacleda Water District 	400	Jeffrey Jordine	255-4068	
Kootenai Country Water (#1)	540	John Shields	667-0340	jshields5@verizon.net
Carlin Bay Property Owners Assoc.	90	Robert Tjossem	689-9107	
City of Juliaetta	840	Frank Groseclose	267-7791	
City of Lewiston 	16,500	Vern Guest	743-7461	watert@ci.lewiston.id.us
City of Pierce 	618	Eric Mason	464-2222	
City of Orofino 	1,609	Larry Annen	476-5051	
Riverside Independent Water	2,000	Billy Beck	476-3613	
City of Kamiah	1,307	Daren Clopton	935-0319	
Elk City Water & Sewer	350	Jon Menough	842-2315	tundraboar@hotmail.com
City of McCall	4,000	John Lewinski	634-1853	
City of Weiser 	5,343	Rod Millbrook	414-1775	wsrh2o@ruralnetwork.net
Horseshoe Bend Water Supply	760	Phil Tschide	793-3175	
United Water (Marden Plant)	90,000	Willis Carr	362-7369	

 Plants actively participating in Performance Based Training (PBT)

PBT timeline and photolog continued....

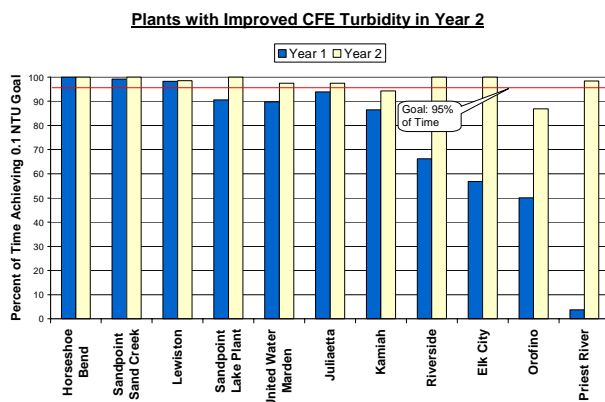
tion and reporting on successes within each plant. Post PBT turbidity comparisons will be developed for assessment of program achievement in May 2006.

AWOP Successes....

Turbidity Optimization - Statewide

Data showed that in year 1, only five of the 17 coagulation plants were meeting the CFE turbidity optimization goal (0.1 NTU) 95% of the time or more. In year 2, **six** more plants were added to the attainment list. It should be noted that there is a "lag time" between data collection/analyses and the referenced AWOP year. Year 2 (July 2004 - June 2005) reviews the plant turbidity data for the period of July 2003 - June 2004.

The graph below demonstrates the turbidity improvements made in 11 of the 17 coagulation plants in Year 2 of AWOP.



Computer Assistance

Many of the plants participating in AWOP have historically been limited in their ability to optimize by a lack of adequate computers. As part of the PBT, DEQ surplus computers were offered to each participating plant. Seven of the eight plants took advantage of this offer and are currently utilizing these computers in their water plants.

Leadership

The *City of Lewiston* has traditionally embraced any and all suggestions for improved water quality and public health protection. In year 2 of AWOP involvement, they are achiev-

ing the optimization goal of 0.1 NTU **99.6%** of the time. Their biggest contribution, however, has been the leadership role they have played as they champion the benefits of optimization and PBT. They were the first plant in Idaho to be approached regarding PBT and they immediately offered to host all sessions at their facility. They have been a leader in PBT and have volunteered their time and expertise to assist other plants as necessary.

Weiser is another facility to be recognized for their leadership role. They joined AWOP in the baseline year while new sedimentation basins were under construction. In spite of operational struggles in bringing these new basins on-line, *Weiser* chose to join PBT and host the second session at their plant. They have been helpful to other AWOP operators by being candid about the difficulties they have encountered and by communicating their positive attitude and their commitment in spite of these difficulties.

Turbidity Improvement

In reviewing the graph to the left, *Priest River* has shown the most improvement. *Priest River* baseline data indicated achievement of the optimization goal of 0.1 NTU only **3.8%** of the time. Through the diligence of a new operator and a supportive city council, the goal was met **98.4%** of the time in year 2.

Upcoming Events...

- **October 7, 2005 - Water Treatment Forum**
This is a one day forum sponsored by AWWA - PNWS to be held at North Idaho College in Coeur d'Alene. Topics will include emerging regulations, radionuclide treatment, chemical feed systems, disinfection and treatment plant optimization. CEUs will be offered. Call Pierre Kwan @ (425)450-6367 for a registration form.

For more information On AWOP
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